GENERAL NOTES:

IN GENERAL, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

1) THE DETAILED DESIGN, FABRICATION, PROCUREMENT, AND INSTALLATION OF THE FIRE PROTECTION SYSTEMS ADDITIONS AND MODIFICATIONS AS INDICATED ON THE CONTRACT DRAWINGS. THE FIRE PROTECTION SYSTEM MODIFICATIONS CONSIST OF THE ADDITION OCCUPANT NOTIFICATION APPLIANCES AND THE REPLACEMENT OF EXISTING OCCUPANT NOTIFICATION APPLIANCES. ALL NEW AND REPLACED APPLIANCES SHALL BE HORN, HORN/STROBE, OR STROBE, A INDICATED IN THE DRAWINGS.

2) INSTALLATION OF NEW CONDUIT, RACEWAY SYSTEM MODIFICATIONS, AND RACEWAYS, AND THE CONTROL UNIT MODIFICATIONS FOR THE FIRE ALARM SYSTEM MODIFICATIONS.

3) ALL PENETRATIONS THROUGH WALLS, FLOORS AND CEILINGS NECESSARY FOR THE INSTALLATION OF THE FIRE PROTECTION SYSTEMS INCLUDING THE INSTALLATION OF APPROVED FIRESTOP ASSEMBLIES NECESSARY TO MAINTAIN THE DESIGNED FIRE RESISTANCE RATING OF THE WALL, CEILING, OR FLOOR ASSEMBLY.

4) SYSTEMS AND DEVICE TESTING.

5) THE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND IMPLEMENTING ALL SAFETY PROGRAMS AND PROCEDURES FOR THIS PROJECT AND SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL SAFETY AND HEALTH REGULATIONS.

6) THE CONTRACT DRAWINGS ARE DIAGRAMMATIC ONLY. SUBCONTRACTOR SHALL DETERMINE THE ACTUAL MEASUREMENTS AND MAKE ANY AND ALL SUCH LENGTH AND OFFSET ADJUSTMENTS AND FIRE ALARM CONTROL UNIT PROGRAMMING AS MAY BE NECESSARY TO COMPLETE THE INSTALLATION AT NO CHANGE IN THE CONTRACT PRICE. THE DRAWINGS ARE NOT INTENDED TO RELIEVE THE SUBCONTRACTOR OF ANY RESPONSIBILITY FOR AVOIDING CONFLICTS OR OBSTRUCTIONS, OR FOR INSTALLING THE FIRE ALARM DEVICES AND EQUIPMENT AS REQUIRED TO PROVIDE COMPLETE PROTECTION OF THE DESIGNATED AREAS IN ACCORDANCE WITH THE REQUIREMENTS OF THE REFERENCED STANDARDS AND THE SPECIFICATIONS. WRITTEN APPROVAL SHALL BE OBTAINED FROM THE OWNER'S REPRESENTATIVE PRIOR TO MAKING ANY MAJOR DEVIATIONS FROM THE ARRANGEMENT AND LAYOUT SHOWN ON THE DRAWINGS.

7) ALL EQUIPMENT SHALL BE NEW, AND APPROVED AND/OR LISTED BY UNDERWRITERS' LABORATORIES OR FACTORY MUTUAL.

8) SYSTEM, EQUIPMENT, INSTALLATION, AND MATERIALS AND METHODS USED SHALL COMPLY WITH THE FOLLOWING:

A) THE REQUIREMENTS OF THE LAWRENCE BERKELEY NATIONAL LABORATORY.

B) NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 72 NATIONAL FIRE ALARM CODE, CURRENT EDITION.

C) CALIFORNIA BUILDING AND FIRE CODES, 2007 EDITIONS.

D) MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES.

NOTIFICATION APPLIANCE CIRCUIT POWER REQUIREMENTS

DESCRIPTION	CURRENT PER APPLIANCE	# OF APPLIANCES CIRCUIT AV1	CIRCUIT AV2	CIRCUIT AV3	CIRCUIT AV4
WHEELOCK EXCEDER STROBE 15 cd	0.057	5	7	0	0
WHEELOCK EXCEDER HORN/STROBE 15 cd	0.082	0	0	0	0
WHEELOCK EXCEDER STROBE 30 cd	0.085	1	3	1	1
WHEELOCK EXCEDER HORN/STROBE 30 cd	0.102	2	1	2	1
WHEELOCK EXCEDER STROBE 75 cd	0.135	2	0	3	0
WHEELOCK EXCEDER HORN/STROBE 75 cd	0.148	1	1	3	1
WHEELOCK EXCEDER STROBE 110 cd	0.182	1	0	0	0
WHEELOCK EXCEDER HORN/STROBE 110 cd	0.197	0	0	0	2
WHEELOCK EXCEDER HORN	0.064	0	0	0	1
TOTAL CIRCUIT CURRENT		1.174	0.904	1.138	0.793

NOTES:

THE FOLLOWING NOTIFICATION APPLIANCES AND THEIR POWER DEMANDS WERE USED IN THE DESIGN:

1. COOPER NOTIFICATION, WHEELOCK EXCEDER SERIES; 15CD (0.057 AMP), 30CD (0.085 AMP), 75CD (0.135 AMP) & 110CD (0.182 AMP) WALL MOUNTED STROBE; RATED 8 TO 33 AMP.
2. COOPER NOTIFICATION, WHEELOCK EXCEDER SERIES; 15CD (0.082 AMP), 30CD (0.102 AMP), 75CD (0.148 AMP) & 110CD (0.197 AMP) WALL MOUNTED HORN/STROBE; RATED 8 TO 33 AMP.
3. COOPER NOTIFICATION, WHEELOCK EXCEDER SERIES; WALL MOUNTED HORN (0.064 AMP); RATED 16 TO 33 AMP.

VOLTAGE DROP CALCULATIONS

{(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT POWER LOAD 21.6 = CONSTANT
D = CONDUCTOR ONE WAY DISTANCE CM = CROSS SECTION AREA OF WIRE (4110 FOR AWG#14)

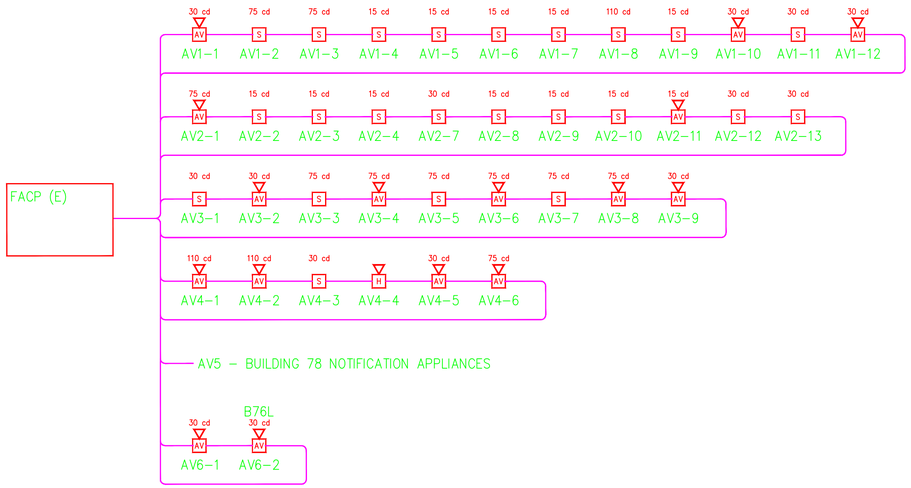
NAC AV1
{1.174 AMP) (500 FT) (21.64)}/4110 VOLTAGE DROP: 3.091 VOLTS AVAILABLE VOLTAGE: 20.909 VOLTS

NAC AV2
{(0.904 AMP) (500 FT) (21.64)}/4110 VOLTAGE DROP: 2.380 VOLTS AVAILABLE VOLTAGE: 21.620 VOLTS

NAC AV3
{(1.138 AMP) (500 FT) (21.64)}/4110 VOLTAGE DROP: 2.996 VOLTS AVAILABLE VOLTAGE: 21.004 VOLTS

NAC AV4
{(0.793 AMP) (500 FT) (21.64)}/4110 VOLTAGE DROP: 2.088 VOLTS AVAILABLE VOLTAGE: 21.912 VOLTS

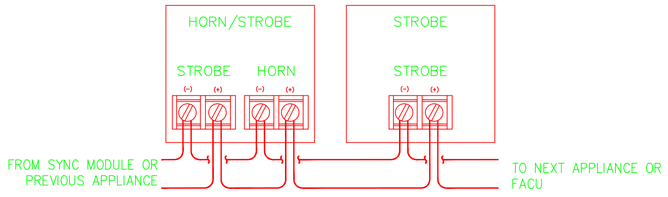
THE CIRCUITS' AVAILABLE VOLTAGE IS ABOVE THE MINIMUM LISTED VOLTAGE FOR THE APPLIANCES.

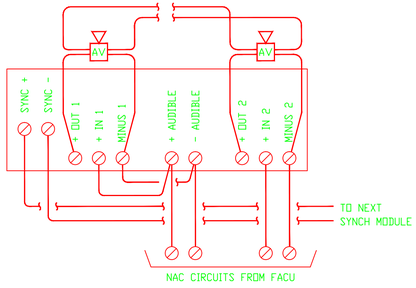


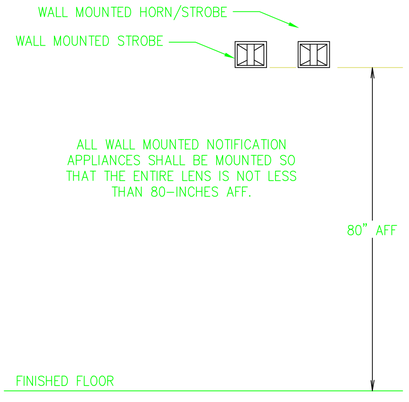
1 FA0.1 NOTIFICATION APPLIANCE RISER DIAGRAM
SCALE: NONE

LEGEND

- EXISTING FIRE ALARM CONTROL PANEL
- WATERFLOW SWITCH (E)
- VALVE POSITION SUPERVISORY SWITCH (E)
- BELL (E)
- FIRE CALL BOX (E)
- EXISTING FIRE ALARM CONDUIT
- RACEWAY JUNCTION BOX
- HEAT DETECTOR (E)
- DUCT SMOKE DETECTOR (E)
- DUCT SMOKE DETECTOR (N)
- NEW HORN/STROBE
- NEW STROBE
- NEW HORN
- NEW FIRE ALARM CONDUIT
- HVAC FAN UNIT SHUTDOWN RELAY







2 FA0.1 NOTIFICATION APPLIANCE WIRING DIAGRAMS & DETAILS
SCALE: NONE

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RECORD DRAWING
06/08/09

REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS
A	HYT	HYT	NA	06/08/09	RECORD DRAWING NOTIFIC APPL

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FIRE ALARM SYSTEM MODIFICATIONS
NOTES, LEGEND & DETAILS

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

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